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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/555,140	08/03/2000	Gunnar-Marcel Klein	178/48916	3885

7590 10/23/2003

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EXAMINER
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SAVAGE, MATTHEW O

ART UNIT	PAPER NUMBER
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1723

DATE MAILED: 10/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/555,140	KLEIN ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Matthew O Savage	1723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE \_\_\_\_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 13, 15-22 and 25-36 is/are pending in the application.
- 4a) Of the above claim(s) 25-34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12, 15-22, 35, and 36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All   b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                             | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____.  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____. | 6) <input type="checkbox"/> Other: _____.                                   |

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 13, 15-22, 35, and 36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Concerning lines 8-9 of claim 13, line 9 of claim 35, and lines it is unclear as to what type of paper a "predominantly cellulose containing filter paper" implies. In particular, it is unclear as to whether applicant is claiming cellulose contents of "up to 50%" as taught on page 3 of the instant specification or cellulose contents of greater than 50% as implied by the common dictionary meaning of the term.

Concerning claim 19, it is unclear by "during a folding process" as to whether or not applicant is claiming a star folded or pleated filter structure.

Regarding line 9 of claim 13 and line 10 of claim 35, it is unclear as to what type of filter paper the term "compressed filter paper" implies.

With respect to lines 9-10 of claim 36, it is unclear as to what range "at least about" implies.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made

to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 13, 15-19, 21, 35, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kadoya in view of Sabee or Togashi et al.

With respect to claims 13, 35, and 36, Kadoya discloses a filter element (see FIGS. 1-6) having a plurality of layers 5, 2 joined together (e.g., by thermal fusing, see lines 1-4 of col. 3), the successive layers in the flow direction exhibiting an increasing degree of separation and a decreasing degree of storage capacity (e.g., with respect to larger diameter particles, see lines 5-38 of col. 3), the inflow layer 5 being comprised of synthetic fibers of a nonwoven web (e.g., rayon and polyester, see lines 67-68 of col. 2) and the discharge layer 2 being comprised of a predominantly cellulose containing filter paper (e.g., linter and pulp, see lines 65-66 of col. 2), the filter paper layer being considered "compressed" since it has a higher density than that of the other layers and/or because paper is made by a compression process, the layers having surface weights that lie within applicant's claimed range (see the thickness values and density values disclosed in col. 3, lines 5-14, and lines 45-64). Kadoya fails to specify the nonwoven web as being "melt-blown". Sabee discloses an analogous non woven fabric (e.g., composed of rayon and polyester, see lines 25-65 of col. 7) formed by a melt blowing process (see lines 14-63 of col. 6) and suggests that such a fabric has a uniform porosity and is suitable for use as a filter medium (see from line 55 of col. 5 to line 14 of col. 6). It would have been obvious to have modified the filter of Kadoya so as to have included a melt-blown non woven web as suggested by Sabee in order to

provide a web having a uniform porosity. Alternately, as best understood, Togashi et al disclose the concept of using an inflow layer formed of a melt blown non woven web positioned upstream of a discharge layer formed of a finer filter medium and suggests that such an arrangement increases the dust holding capacity of the filter. It would have been obvious to have modified the filter of Kadoya so as to have included an inflow layer formed of a melt blown non woven web as suggested by Togashi et al in order to improve the dust holding capacity of the filter

As to claim 15, Kadoya discloses at least three medium layers joined together as recited in the claim (see FIGS. 3-6).

Regarding claim 16, Kadoya discloses an intermediate medium layer 5b (see FIGS. 3-6) that is considered compressed with respect to the inflow side layer 5a since it has a higher density than that of the inflow side layer 5a (see lines 56-57 of col. 3), and Sabee discloses a melt blow non-woven web.

Concerning claim 17, Kadoya discloses a star folded filter element (see FIG. 7).

Regarding claim 21, Kadoya discloses a cellulose containing filter layer including up to but not including 50% synthetic fibers (e.g., 15% rayon fibers, see lines 65-68 of col. 2).

Claims 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kadoya in view of Sabee or Tagashi et al as applied to claim 13 above, and further in view of applicant's admission on lines 17-33 of page 10 of the appeal brief filed on 11-22-02.

Kadoya, Sabee, and Tagashi et al fail to disclose the layers of filter medium as being welded together by ultrasound as recited in claim 18, the layers of filter media being joined together by surface pressure by a folding process as recited in claim 19, or the layers of filter media as being adhesively bonded together by gluing with a powdered adhesive or with a hot melt impregnating agent as recited in claim 20, however, applicant admits that such arrangements are well known in the art on lines 17-33 of page 10 of the appeal brief filed on 11-22-02. Accordingly, it would have been obvious to have modified the filter suggested by Kadoya and Sabee so as to have included the well known bonding arrangements recited in claims 18-20 in order to facilitate construction of the filter utilizing joining techniques that were well known in the art.

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kadoya in view of Sabee or Togashi et al as applied to claim 21 above, and further in view of EP 338,479 to Klimmek et al.

Kadoya, Sebee, and Togashi et al fail to specify the cellulose containing filter layer as including glass fibers. Klimmek et al disclose an analogous filter that includes a filter paper support layer including glass fibers and suggests that the fibers increase the strength of the filter paper layer. It would have been obvious to have modified the cellulose containing layer suggested by Kadoya so as to have included glass fibers as suggested by Klimmek et al order to increase the strength of the paper layer.

Applicant's arguments filed 7-29-03 have been fully considered but they are not persuasive.

With respect to applicant's arguments against the rejection under 35 U.S.C. 112, second paragraph and the term "predominantly", applicant argues that the specification on page 3 does not teach cellulose contents of "up to 50%", however, it is held that the statement on page 3 "The cellulose-containing filter papers can also have a foreign substance content of up to 50%, with the foreign substances possibly being glass fibers or polyester fibers." clearly teaches a composition of up to 50% cellulose with the balance being foreign substances/substances other than cellulose. Applicant's argument that the common dictionary definition of "predominantly" does not imply more than 50% is noted but fails to apply in the instant case since the specification clearly limits the cellulose composition to up to 50%. It is suggested that all of the independent claims be amended "up to 50% cellulose" as opposed to "predominantly cellulose".

Applicant's argument concerning "compressed filter paper" is not considered fully responsive since it remains unclear as to how "compressed filter paper" differs from other filter papers.

Applicant's argument concerning claim 19 is not considered fully responsive since it remains unclear as to whether or not a star folded filter medium is being claimed. Applicant's argument that types of folding other than star folding are possible is not agreed with since the instant specification is clearly limited star folded configurations.



Applicant's argument that Kadoya fails to disclose a discharge layer that is a filter active layer is not agreed with since the discharge layer 2 is defined as high density filter paper functioning to catch dust particles that have passed through dust cake layer 6 and non wove fabric 5 (see lines 17-31 of col. 3).

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew O Savage whose telephone number is 703-308-3854. The examiner can normally be reached on Monday-Friday, 7:00am-3:30pm.

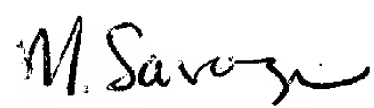


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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda W. Walker can be reached on 703-308-0457. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

  
Matthew O Savage  
Primary Examiner  
Art Unit 1723

mos  
October 17, 2003